



# PVC, CPVC & PP DIAPHRAGM VALVES

DV-2-0814



Patent No.  
6,575,431  
5,582,439

## Low Profile Design

Minimizes space required to install and operate. Allows compact system planning and engineering in even the most demanding applications.

## Multiple End Connector Options

Spigot, flanged, or true union socket/threaded & SR threaded ends provides greater versatility for all applications. Popular true union style features strong buttress threaded union nuts with both socket and threaded end connectors included with each valve.

## Heavy Bodied Schedule 80 PVC, CPVC or PP Construction with Mountable Body

Schedule 80 smooth-wall construction provides extra strength and superior chemical and corrosion resistance while maximizing fluid flow. Body can be easily secured to support surface using built-in mounting holes with user supplied self-tapping screws.

## Choice of Chemical/Abrasion Resistant Elastomeric or PTFE Diaphragms

Choice of high grade, abrasion resistant EPDM, FKM, or elastomer backed PTFE diaphragm allows application-specific selection for optimum chemical resistance. Diaphragm tab marking provides quick elastomer type identification.

## Easy-Grip Handle with Clear-View Position Indicator

High Impact polypropylene handwheel style handle provides a firm grip for smooth, easy operation. Clear-View indicator with highly visible yellow marker shows valve position at a glance.

## Silicon-Free Assembly

## Precision Engineered

This full-featured valve is engineered to provide accurate throttling control and shutoff for industrial, chemical and water treatment applications. Weir type design eliminates entrapped fluids in valve and is excellent for handling liquids with suspended solids, viscous fluids and slurries. Available in PVC, CPVC and Glass Filled Polypropylene with a variety of Diaphragm material options. PVC & CPVC 1/2" - 2" valves with Flanged Body, Spigot Body or True Union style Socket & Thread ends or Optional Special Reinforced (SR) Threads, and sizes 2-1/2" - 8" with Flanged Body. Polypropylene 1/2" - 2" valves with True Union style Special Reinforced (SR) Threaded ends and sizes 2-1/2" - 8" with Flanged Body.

### Sample Engineering Specification

All thermoplastic Diaphragm valves shall be Weir type constructed from PVC Type I, ASTM D 1784 Cell Classification 12454 or CPVC Type IV, ASTM D 1784 Cell Classification 23447, or Polypropylene, ASTM D 4101. All diaphragms shall be EPDM, FKM or PTFE with EPDM or FKM backing. All valves shall have built-in position indicator with polypropylene handwheel. All True Union style valve union nuts shall have Buttress threads. All PVC and CPVC 1/2" through 2" valves shall be pressure rated to 235 psi, all 2-1/2" through 4" and all flanged valves & valves w/ PTFE diaphragms shall be pressure rated to 150 psi, all 6" valves shall be pressure rated to 100 psi, and all 8" valves shall be pressure rated to 75 psi for water at 73° F. All Polypropylene valves shall be pressure rated to 150 psi for water at 73° F, as manufactured by Spears® Manufacturing Company.

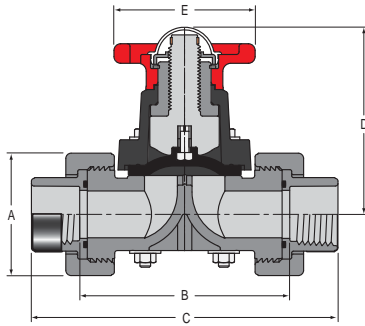


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## Technical Information

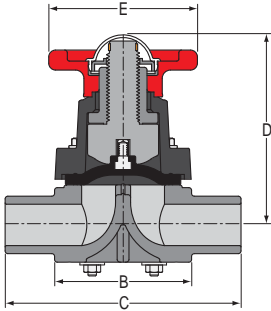
### Socket/Threaded & SR Threaded End Connectors Dimensions & Weights



| Nominal Size | Dimension Reference (inches, ± 1/16) |                |         |          |         | Approx. Wt. (Lbs.) |      |      |
|--------------|--------------------------------------|----------------|---------|----------|---------|--------------------|------|------|
|              | A                                    | B <sup>1</sup> | C       |          | D       | E                  | PVC  | CPVC |
|              |                                      |                | Socket  | Threaded |         |                    |      |      |
| 1/2          | 1-15/16                              | 3-7/8          | 5-9/16  | 5-3/16   | 3-11/32 | 2-7/8              | 1.12 | 1.14 |
| 3/4          | 2-1/2                                | 4-1/2          | 6-7/16  | 5-15/16  | 3-3/4   | 3-1/8              | 1.37 | 1.36 |
| 1            | 2-9/16                               | 4-15/16        | 7-3/16  | 6-13/16  | 4-7/16  | 3-3/8              | 2.35 | 2.43 |
| 1-1/4        | 3-5/16                               | 5-1/2          | 8-7/8   | 8-1/4    | 5-5/8   | 3-7/8              | 3.91 | 4.03 |
| 1-1/2        | 3-17/32                              | 6-5/16         | 9-5/16  | 8-7/16   | 5-5/8   | 4-5/8              | 4.08 | 4.21 |
| 2            | 4-7/32                               | 7-1/2          | 10-9/16 | 9-1/2    | 7       | 6-5/8              | 7.06 | 7.25 |

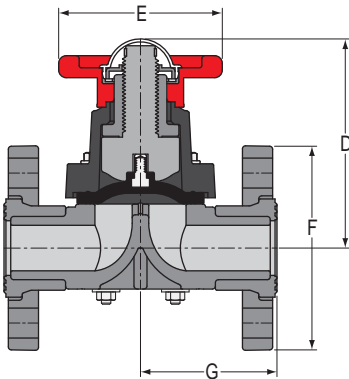
1: Valve Lay Length.

### Spigot Diaphragm Dimensions & Weights



| Nominal Size | Dimension Reference (inches, ± 1/16) |       |         |         | Approx. Wt. (Lbs.) |      |
|--------------|--------------------------------------|-------|---------|---------|--------------------|------|
|              | B                                    | C     | D       | E       | PVC                | CPVC |
| 1/2          | 2-5/8                                | 4-7/8 | 3-11/32 | 2-7/8   | .61                | .63  |
| 3/4          | 2-3/4                                | 5     | 3-3/4   | 3-1/4   | .79                | .82  |
| 1            | 3-1/8                                | 5-3/8 | 4-7/16  | 3-5/16  | 1.32               | 1.36 |
| 1-1/4        | 3-3/4                                | 6-1/4 | 5-5/8   | 4-19/32 | 2.41               | 2.50 |
| 1-1/2        | 3-3/4                                | 6-1/2 | 5-5/8   | 4-19/32 | 2.43               | 2.52 |
| 2            | 4-3/4                                | 7-3/4 | 7       | 5-7/8   | 4.15               | 4.43 |

### Flanged Diaphragm Dimensions & Weights



| Nominal Size | Dimension Reference (inches, ± 1/16) |          |        |         | Approx. Wt. (Lbs.) |        |
|--------------|--------------------------------------|----------|--------|---------|--------------------|--------|
|              | D                                    | E        | F      | G       | PVC                | CPVC   |
| 1/2          | 3-11/32                              | 2-7/8    | 3-1/2  | 2-9/16  | .98                | 1.02   |
| 3/4          | 3-3/4                                | 3-1/4    | 3-7/8  | 2-5/8   | 1.31               | 1.37   |
| 1            | 4-7/16                               | 3-5/16   | 4-1/4  | 2-13/16 | 2.00               | 2.08   |
| 1-1/4        | 5-5/8                                | 4-19/32  | 4-5/8  | 3-1/4   | 3.71               | 3.76   |
| 1-1/2        | 5-5/8                                | 4-19/32  | 5      | 3-3/8   | 3.88               | 4.04   |
| 2            | 7                                    | 5-7/8    | 6      | 4       | 5.59               | 5.71   |
| 2-1/2        | 10-1/4                               | 8-7/8    | 7-1/2  | 5-19/32 | 15.75              | 16.43  |
| 3            | 10-1/4                               | 8-7/8    | 7-1/2  | 5-19/32 | 15.75              | 16.45  |
| 4            | 12-1/4                               | 10-1/2   | 9      | 6-5/8   | 24.44              | 25.37  |
| 6            | 16-3/4                               | 18-13/32 | 11     | 9-3/8   | 53.90              | 58.43  |
| 8            | 21                                   | 21-19/32 | 13-1/2 | 11-5/32 | 96.28              | 100.05 |

### Cv Values

| Valve Size | PERCENT OPEN |       |       |       |
|------------|--------------|-------|-------|-------|
|            | 100%         | 75%   | 50%   | 25%   |
| 1/2        | 5.1          | 4.8   | 4.2   | 2.4   |
| 3/4        | 8.0          | 7.5   | 6.5   | 3.8   |
| 1          | 11.5         | 10.8  | 9.4   | 5.4   |
| 1-1/4      | 22.0         | 20.6  | 18.0  | 10.3  |
| 1-1/2      | 28.2         | 26.4  | 23.0  | 13.3  |
| 2          | 52.9         | 49.6  | 43.2  | 24.9  |
| 2-1/2      | 119.0        | 111.5 | 97.1  | 55.9  |
| 3          | 119.0        | 111.5 | 97.1  | 55.9  |
| 4          | 189.2        | 177.3 | 154.4 | 88.9  |
| 6          | 402.2        | 375.8 | 327.0 | 187.5 |
| 8          | 700.0        | 659.5 | 573.2 | 328.4 |

NOT FOR DISTRIBUTION OF  
COMPRESSED AIR OR GAS



Gallons Per Minute at 1 psi Pressure Drop



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